Saskatchewan
Ministry of
Highways and
Infrastructure

2007 Ferry Traffic and Seasonal/Winter Roads

Annual Report

Traffic Services
Programs and Services Branch
Policy and Programs Division

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Executive Summary

This report summarizes traffic data collected at the 12 cable-stayed ferries and one free swimming ferry barge operated by the Ministry of Highways and Infrastructure during 2007. The report provides an analysis of passenger and vehicle volumes as well as traffic composition. Information about four seasonal roads operated by the Ministry is also included.

The main findings of the 2007 report are listed below.

- The ferry system operated at the highest traffic levels since 2001.
- The 2007 ferry operating season length was slightly longer than in the 2006 season, with many ferries operating well into November..
- The total amount of down time reported by all ferries was lower than in 2006. Six of the ferries reported no down time at all.
- The Riverhurst ferry had significantly less down time than in 2006. In 2006 the ferry was shut down for a total of 1111 hours or 29.8% of the operating season because of a series of mechanical problems. The number of down time hours in 2007 was 55 or 1.0% of the operating season.
- Besides Riverhurst, five other ferries, at Paynton, Cecil, Wingard, Estuary, and Lancer, were shut down for short periods mainly because of high water or wind levels.
- The 2007 ADT was 5.5% higher than the 2006 ADT.
- Fenton, Clarkboro, Lancer, Riverhurst, St. Laurent, Lemsford, and Estuary ferries carried over 10% more vehicles in 2007 than in 2006.
- The 2007 ADT at Cecil dropped by over 15% compared with the 2006 ADT, while the ADT at the Paynton, Riverhurst, Weldon, and Hague ferries dropped by less than 5%.
- The Clarkboro ferry had the highest traffic volume.
- Only the Cecil, Lemsford, Estuary, and Lancer ferries had decreased truck percentages in 2007 compared with 2006.

The 2007 report recommends:

- When the operating agreement for the Wollaston Barge ferry is renegotiated, the operators be required to collect passenger volumes and to use the same vehicle classification system as the other ferries. The Traffic Engineers are prepared to assist the Wollaston Barge operators to change their vehicle classification system. The assistance could include a visit to the ferry if required.

1.0 Introduction

This annual report provides a summary and analysis of the traffic using the provincial ferry system in 2007. Traffic data is reported for the thirteen Ministry owned ferry sites in 2007. This report examines vehicle types and historic traffic for each ferry. Useful insights into the function of each ferry can be obtained by examining the distribution and composition of ferry traffic. Passenger data for twelve of the ferry sites and operational information about the four seasonal/winter roads are also included in this report.

2.0 Background

The Ministry operated twelve cable-stayed ferries and one free swimming ferry barge during 2007. Cable-stayed ferries operated on the North Saskatchewan and South Saskatchewan Rivers and on Lake Diefenbaker. The single free swimming ferry operates on Wollaston Lake to serve the community of Wollaston Lake. Other than replacing the Cumberland ferry with a bridge in 1996, the ferry system has not changed since responsibility for the system was moved to the Ministry in 1992. Ferry locations are shown in Table I below.

Table I. Ferry Locations

Ferry	Location	Ministry Region
Clarkboro	South Saskatchewan River	Central Region
Riverhurst	Lake Diefenbaker	Southern Region
Paynton	North Saskatchewan River	Central Region
Weldon	South Saskatchewan River	Northern Region
St. Laurent	South Saskatchewan River	Central Region
Cecil	North Saskatchewan River	Northern Region
Hague	South Saskatchewan River	Central Region
Wingard	North Saskatchewan River	Central Region
Lemsford	South Saskatchewan River	Southern Region
Estuary	South Saskatchewan River	Southern Region
Fenton	South Saskatchewan River	Northern Region
Lancer	South Saskatchewan River	Southern Region
Wollaston Barge	Wollaston Lake	Northern Region

Ferry traffic data was collected by the ferry operators and forwarded to the traffic engineers, who analyzed and compiled this annual report. The vehicle classification forms used by ferry operators are shown in Appendix A.

During the winter months, the Ministry operated four seasonal/winter roads, which have a total length of approximately 458 km. These roads provide access to isolated communities and seasonal industrial activities. The operational periods of the roads vary considerably from year to year because of weather conditions. Seasonal/winter road locations are shown in Table II below.

Table II. Seasonal/Winter Road Locations

Road	Location	Length (km)	Region
Cumberland House	Hwy 9 to Cumberland House	52	Northern Region
Riverhurst	Hwy 42 across Lake Diefenbaker	2	Southern Region
Wollaston Lake	Hwy 905 to Wollaston Lake	46	Northern Region
Athabasca	Points North Landing to Uranium City	358	Northern Region

The locations of the ferries and seasonal/winter roads, including ice crossings, are shown on the map on the following page.

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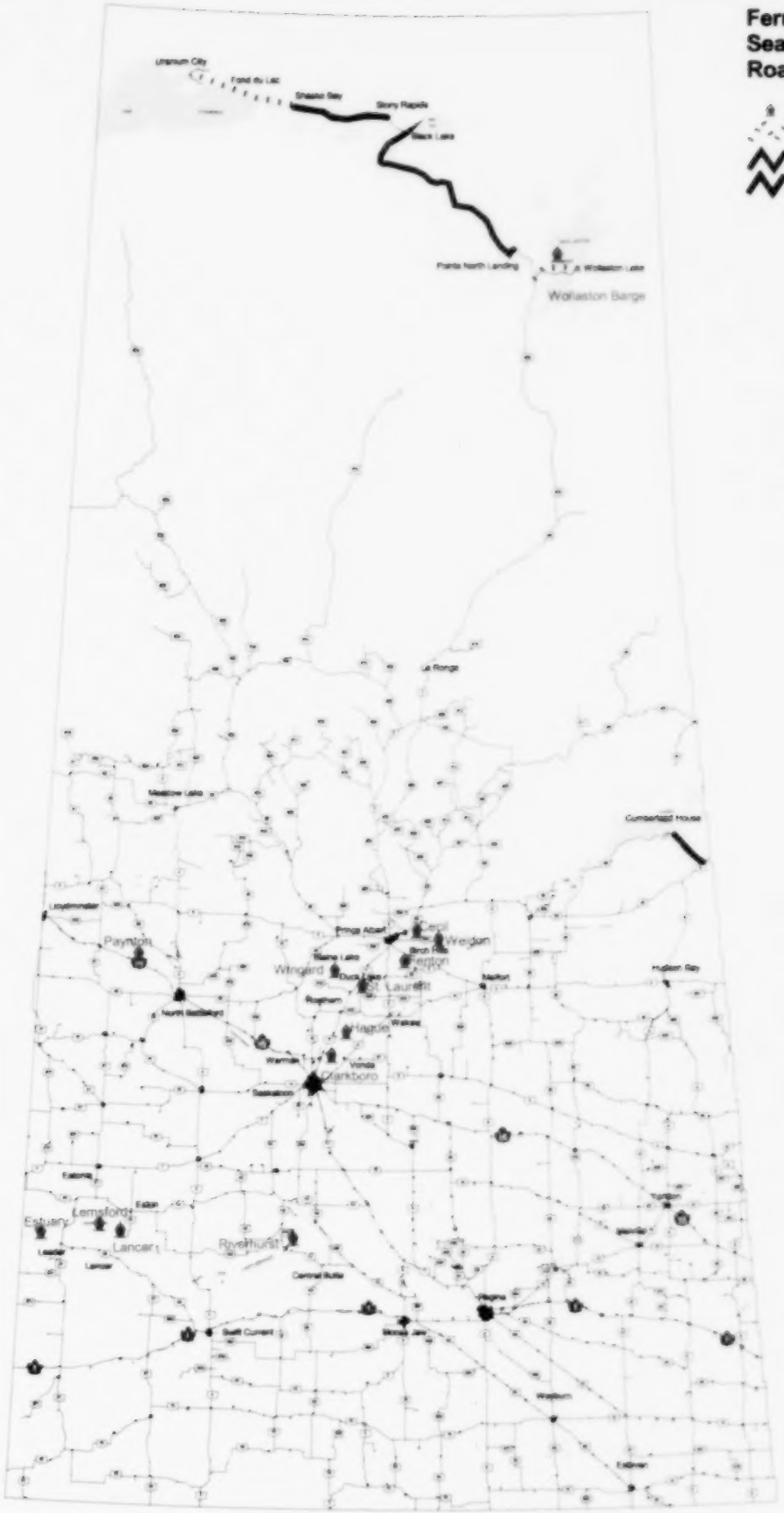
Ferry and Seasonal/Winter Road Locations

- Ferry Location
- Ice Crossing
- Seasonal Road
- Winter Road



3.0 Ferry Operating Seasons

All ferries, except the Riverhurst ferry and the Wollaston Barge ferry, operated 17 hours per day between the hours of 7:00 am and midnight. The Wollaston Barge ferry operated when a trip was booked, and the Riverhurst ferry operated 24 hours per day. Ferries did not run at times because of mechanical failure, bad weather, or poor river conditions. Table III below summarizes the 2007 operational season including downtime at all ferries in the province. Details of the downtime periods and their causes are shown in Appendix B. The 2007 operating season was slightly longer than in 2006, and the total amount of down time reported by all the ferries was significantly lower than in 2006. The main reason for the decrease was much lower amount of downtime for the Riverhurst ferry.

Table III. 2007 Ferry Operating Season Statistics

Ferry	Season				Out of Service	
	Opening	Closing	Length (days)	Operating Hours	Hours	Percent
Clarkboro	Apr 17	Nov 25	222	3774	0	0.0
Paynton	Apr 27	Nov 5	192	3167	97	3.0
Riverhurst	Apr 29	Dec 12	227	5379	55	1.0
Weldon	Apr 30	Nov 6	190	3221.5	0	0.0
St. Laurent	Apr 20	Nov 20	214	3638	0	0.0
Cecil	Apr 30	Nov 6	190	3116	96	3.0
Wingard	Apr 25	Nov 6	195	3264	51	1.5
Lemsford	Apr 18	Nov 19	215	3655	0	0.0
Hague	Apr 25	Nov 22	211	3587	0	0.0
Fenton	May 1	Nov 6	189	3207	0	0.0
Estuary	Apr 18	Nov 19	215	3503	152	4.2
Lancer	Apr 17	Nov 19	216	3547.5	124.5	3.4
Wollaston Lake	June 11	Oct 29	140		216	6.4

4.0 Volume, Passenger and Classification Summaries

Table IV below summarizes the 2007 monthly traffic at the ferry sites. Historic traffic volumes for these ferries are shown in Appendix C. The average number of vehicles using the ferry per day is represented by the Average Daily Traffic (ADT). Historic ADT is shown in Appendix D. ADT at the Riverhurst ferry and Wollaston Barge ferry can not be directly compared to other ferries. The Riverhurst ferry operated 24 hours a day whereas the other cable-stayed ferries operated 17 hours a day. The Riverhurst ferry is also the only ferry that is located on a provincial highway.

Table IV. Monthly Ferry Traffic Volumes for the 2007 Season

Ferry	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total	ADT
Clarkboro	3,953	11,842	12,364	13,482	13,824	13,549	12,960	7,906	0	89,880	405
Paynton	443	3,877	5,148	5,789	5,413	4,439	4,415	587	0	30,111	162
Riverhurst	142	3,344	4,726	7,220	5,523	4,063	3,121	2,355	751	31,245	139
Weldon	19	4,091	4,507	4,430	4,322	3,896	3,934	688	0	25,887	137
St. Laurent	717	2,657	2,958	4,749	3,061	2,726	2,574	1,310	0	20,752	97
Cecil	18	1,379	1,584	1,978	2,009	1,907	1,594	305	0	10,774	59
Wingard	210	1,104	1,603	2,508	1,918	1,543	1,693	336	0	10,915	57
Lemsford	375	1,487	1,585	1,949	1,634	1,222	1,298	647	0	10,197	47
Hague	209	1,499	1,622	1,765	1,545	1,432	1,434	824	0	10,330	49
Fenton	0	1,716	1,467	1,502	1,558	1,388	1,502	261	0	9,394	50
Estuary	379	1,126	821	1,815	1,546	1,512	1,386	741	0	9,326	45
Lancer	423	1,024	813	1,476	1,428	1,361	1,124	621	0	8,270	40
Wollaston Barge	0	0	114	155	186	114	119	0	0	688	5
Totals	**6,888**	**35,146**	**39,312**	**48,818**	**43,967**	**39,152**	**37,154**	**16,581**	**751**	**267,769**	

Table V summarizes the 2007 monthly number of passengers for the cable-stayed ferry sites. Historic passenger volumes for these ferries are shown in Appendix E.

Table V. Monthly Ferry Passenger Volumes for the 2007 Season

Ferry	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Total
Clarkboro	6193	18584	19638	21591	21932	20904	19431	12034	0	140307
Paynton	711	6186	8637	10953	9076	7791	7614	941	0	51909
Riverhurst	229	5796	8221	14068	10700	7049	5146	3880	1231	56320
Weldon	25	8127	8905	9007	8715	7532	7377	1159	0	50847
St. Laurent	1548	5566	7006	10746	6449	5097	4687	2310	0	43409
Cecil	32	2263	2630	3971	3511	3072	2510	516	0	18505
Wingard	459	2255	3507	6364	4175	3193	3360	573	0	23886
Lemsford	599	2471	2896	3903	3050	2052	2132	1130	0	18233
Hague	333	2361	2791	3059	2623	2236	2012	1224	0	16639
Fenton	0	2655	2232	2312	2412	2059	2123	402	0	14195
Estuary	661	2085	1518	3313	3138	2579	2345	1329	0	16968
Lancer	628	1667	1333	2454	2342	2416	1882	1068	0	13790
Totals	**11,418**	**60,016**	**69,314**	**91,741**	**78,123**	**65,980**	**60,619**	**26,566**	**1,231**	**465,008**

Passenger volumes were first recorded in 2000, except for Riverhurst and St. Laurent where volumes have been recorded since 1996 and 2003 respectively.

Ferry operators record the type of vehicles using the ferries. The breakdown of vehicle types is summarized in the charts below. The Wollaston Barge ferry is not included in these graphs because it uses a unique classification scheme.

Chart 4.0A 2007 Straight Trucks by Location

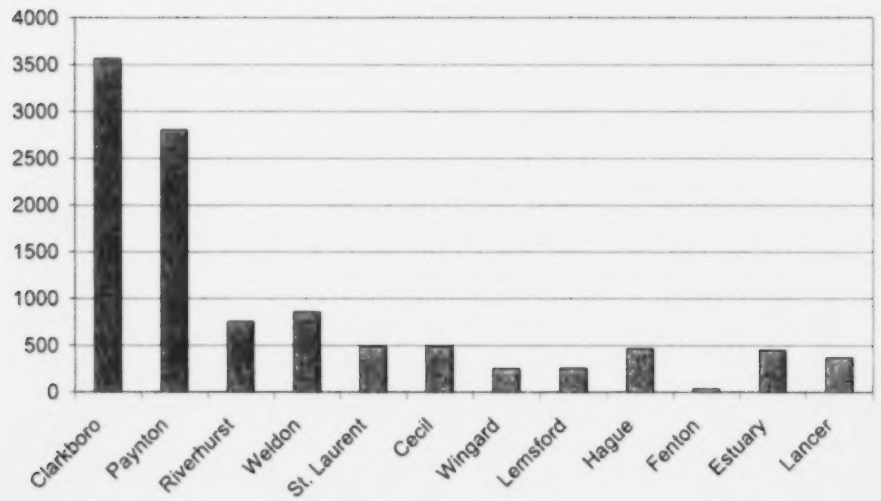


Chart 4.0B 2007 Single Trailer Trucks by Location

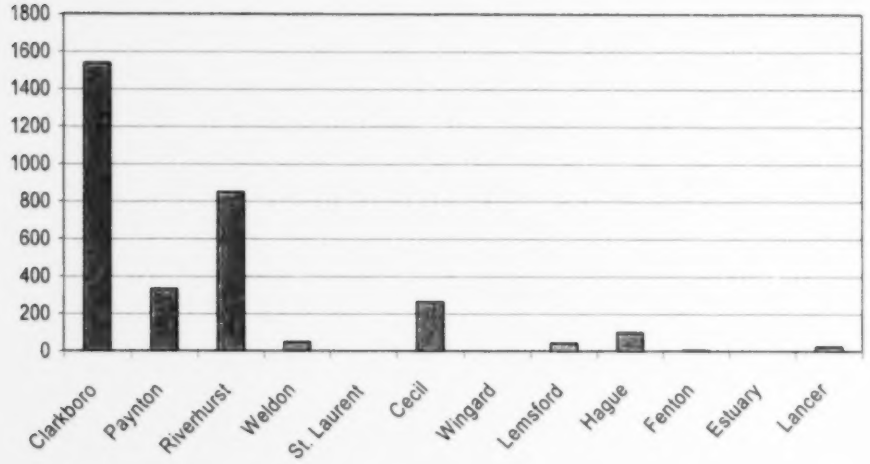
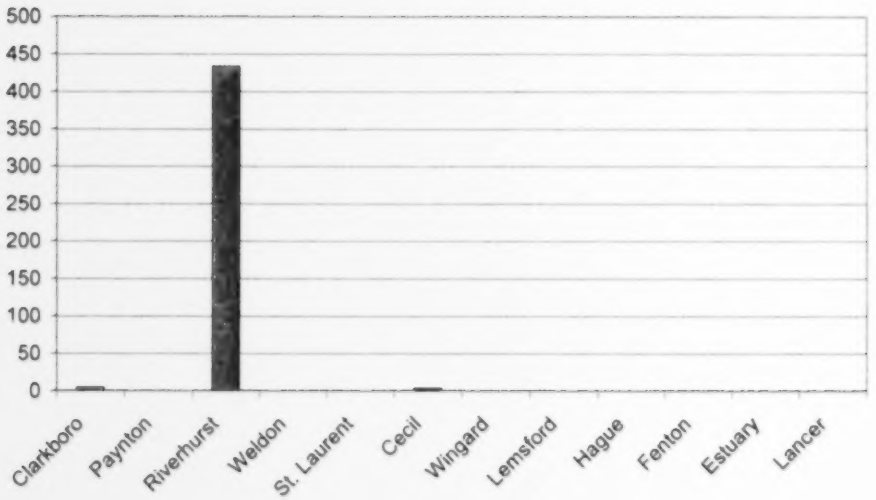
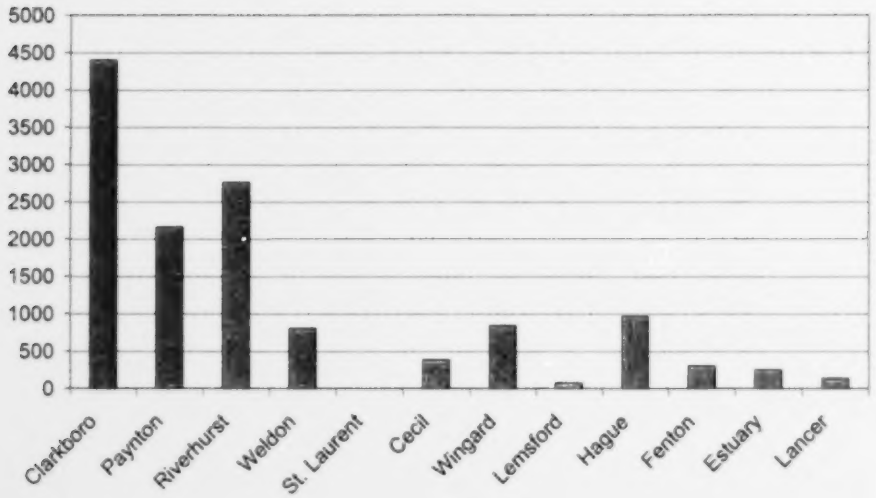


Chart 4.0C 2007 Multi Trailer Trucks by Location



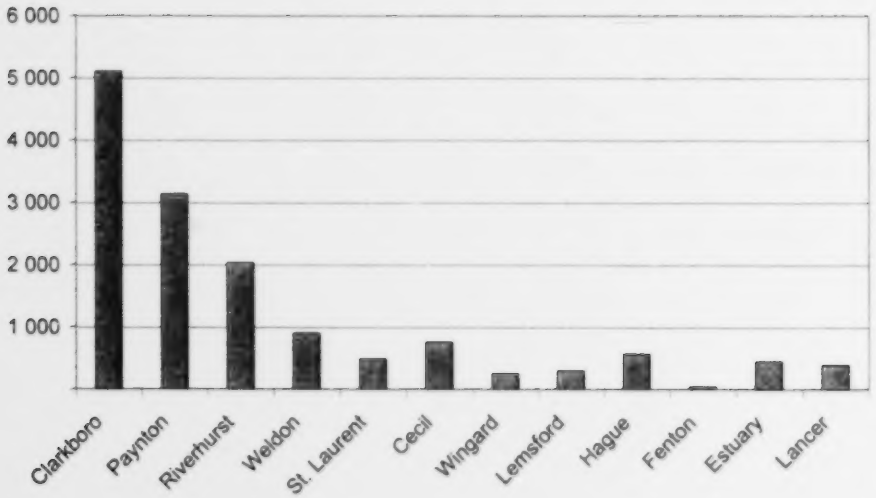
Most ferries are not long enough to accommodate multi trailer trucks.

Chart 4.0D 2007 Other Vehicles by Location



The vehicle category "other" normally refers to farm or construction equipment except near recreation areas, where they are often recreational vehicles or passenger vehicles pulling a boat or camping trailer.

Chart 4.0E 2007 Commercial Vehicles by Location



The commercial vehicles shown above only contain straight, single and multi trailer trucks. The "other" vehicles are not included because they are typically not hauling freight or commodities.

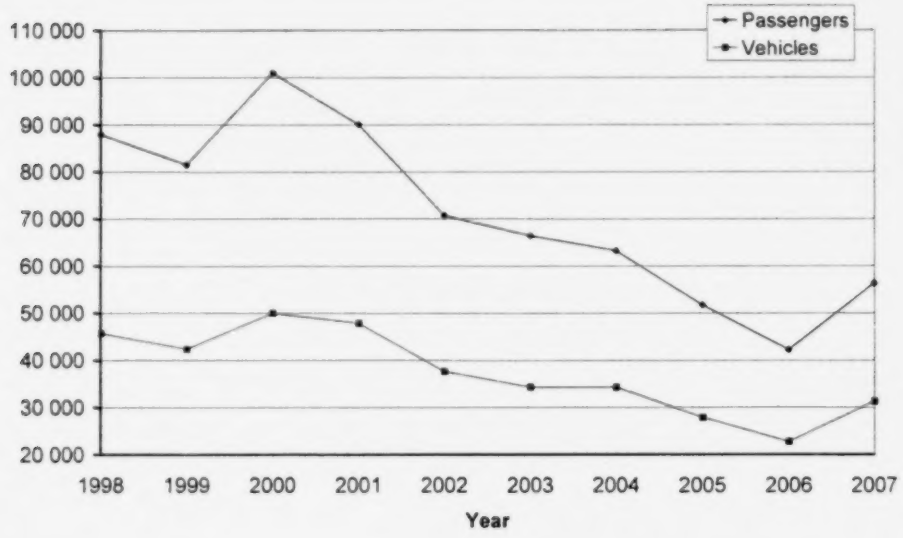
5.0 Site by Site Analysis

The ferry traffic data in this section are summarized by Ministry maintenance area. The area by area analysis results in six groupings: Moose Jaw, North Battleford, Prince Albert, Saskatoon, Swift Current and Wollaston.

5.1 Moose Jaw Area

The Moose Jaw area contains only the Riverhurst ferry, which is the largest and most sophisticated cable-stayed ferry in the province. This is the only ferry in the system located on a provincial highway. The Riverhurst ferry carries traffic on Highway 42 across the 2 km width of Lake Diefenbaker.

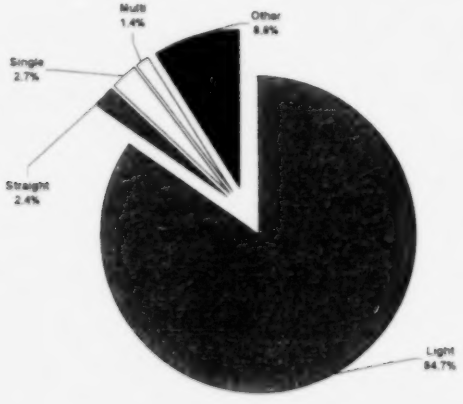
Chart 5.1A 10 Year History of Traffic on the Riverhurst Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	45 763	42 424	50 010	47 867	37 578	34 288	34 258	27 829	22 741	31 245	**37 400**
Passengers	87 956	81 526	100 979	90 056	70 700	66 422	63 193	51 692	42 213	56 320	**71 106**
ADT	190	174	216	204	176	169	153	127	144	139	**169**
Truck %	7.3	7.9	5.5	7.0	7.7	7.0	6.4	6.3	5.5	6.5	**6.7**

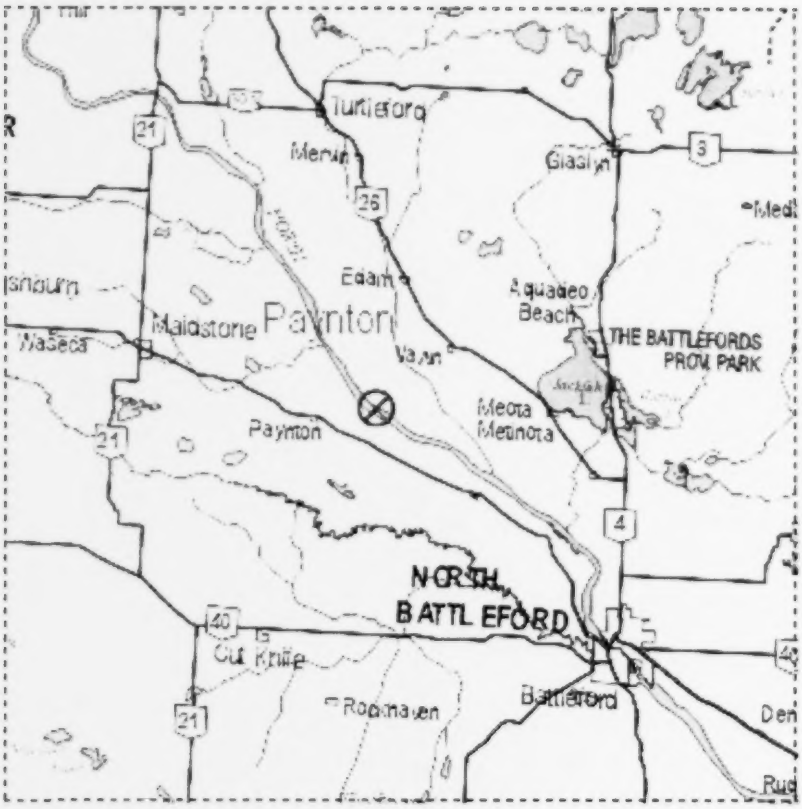
Traffic on the Riverhurst ferry increased by 37% compared to 2006. However, the 2007 ADT decreased by 3% from 2006. The reason for the large increase in vehicles carried was an increase in operating hours. There were 1111 hours of downtime in 2006 due to mechanical problems. In 2007, the number of downtime hours was reduced substantially to 55.

Chart 5.1B Vehicle Types Using the Riverhurst Ferry



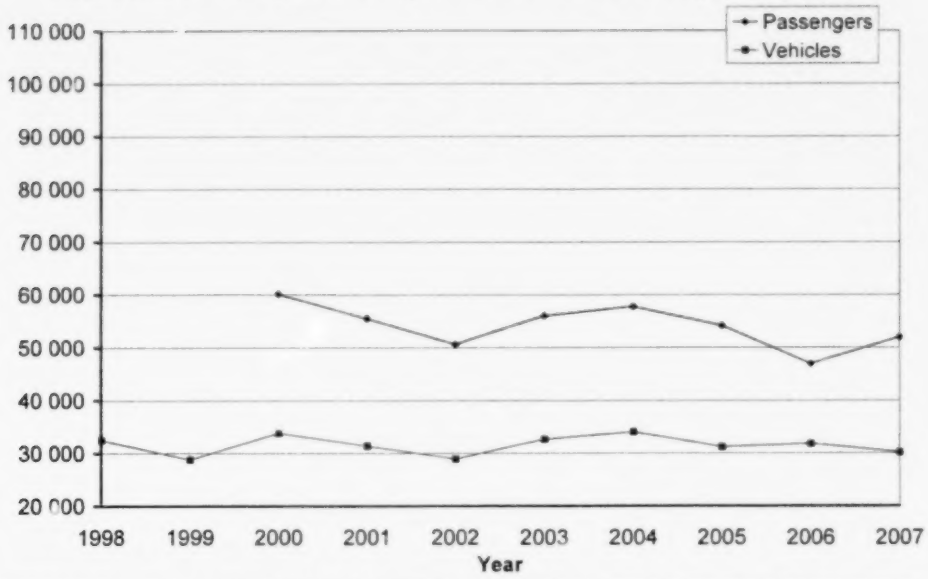
Riverhurst had the highest percentage of "single" vehicles. Single vehicles are defined as semi trucks with a single trailer.

5.2 *North Battleford Area*



The North Battleford area has only the Paynton ferry.

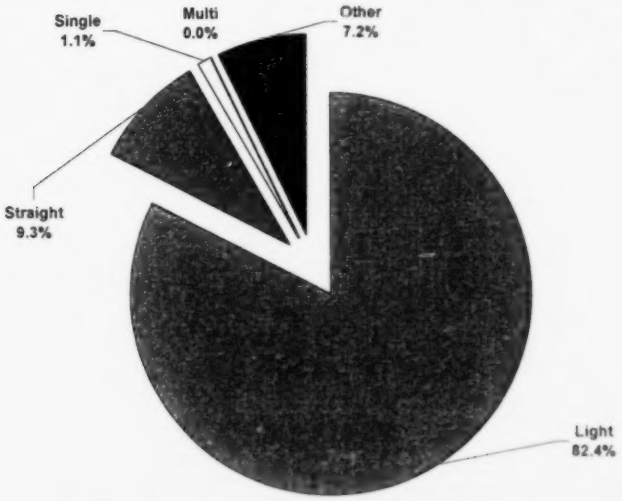
Chart 5.2A 10 Year History of Traffic on the Paynton Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	32 453	28 808	33 749	31 348	28 910	32 603	33 996	31 155	31 752	30 111	**31 489**
Passengers			60 119	55 475	50 577	56 014	57 743	54 100	46 889	51 909	**54 103**
ADT	159	141	170	158	167	175	180	161	169	162	**164**
Truck %	9.4	10.3	11.0	12.0	14.0	13.2	12.1	11.4	12.3	10.4	**11.6**

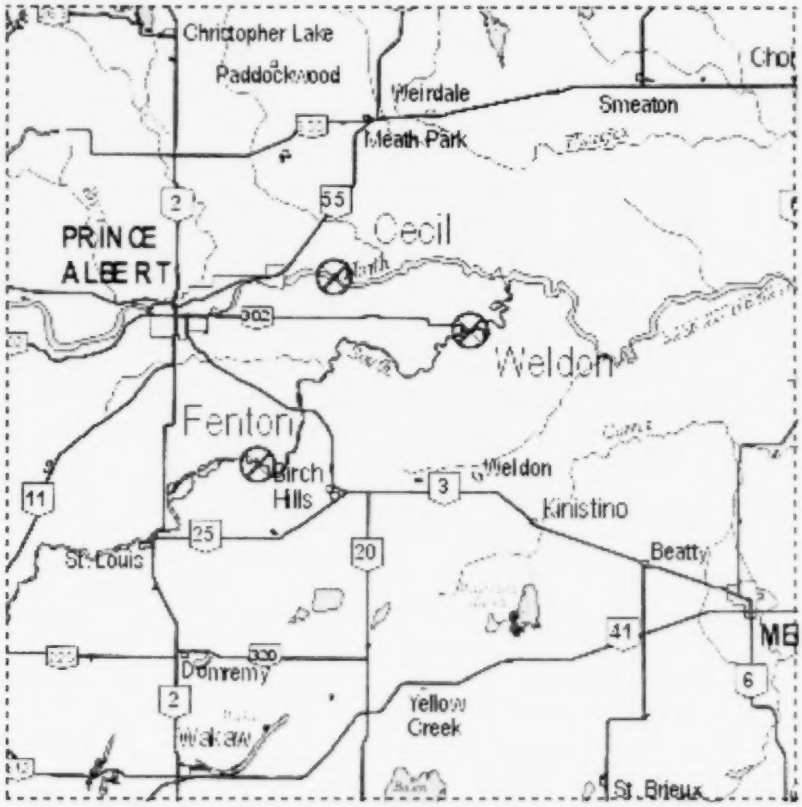
In 2007, traffic on the Paynton ferry decreased by 5%. The ADT decreased by 4% to slightly below the ten year average.

Chart 5.2B Vehicle Types Using the Paynton Ferry



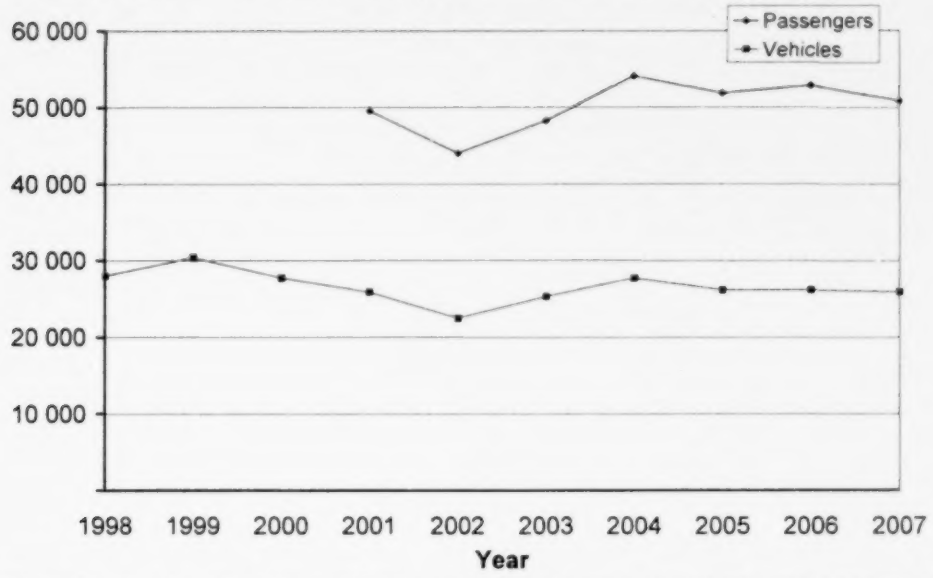
Paynton serves as a freight haul link to Highway 16, as demonstrated by the high percentage of trucks that used the ferry in 2007. The percentage of trucks was the highest of all the cable-stayed ferries.

5.3 Prince Albert Area



The Prince Albert area includes the Weldon, Cecil and Fenton ferries.

Chart 5.3A 10 Year History of Traffic on the Weldon Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	28 003	30 382	27 770	25 875	22 461	25 308	27 709	26 124	26 137	25 887	**26 566**
Passengers				49 555	44 007	48 249	54 082	51 835	52 851	50 847	**50 204**
ADT	142	159	141	135	133	142	141	144	144	137	**142**
Truck %	4.8	5.1	4.5	5.2	3.8	5.9	3.8	3.4	3.1	3.5	**4.3**

In 2007, traffic on the Weldon ferry decreased by only 1% compared to 2006. The ADT decreased by 5% and remained relatively close to the ten year average.

Chart 5.3B Vehicle Types Using the Weldon Ferry

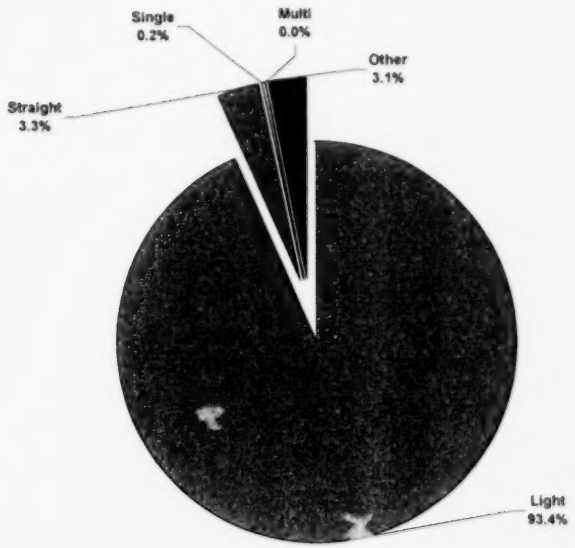
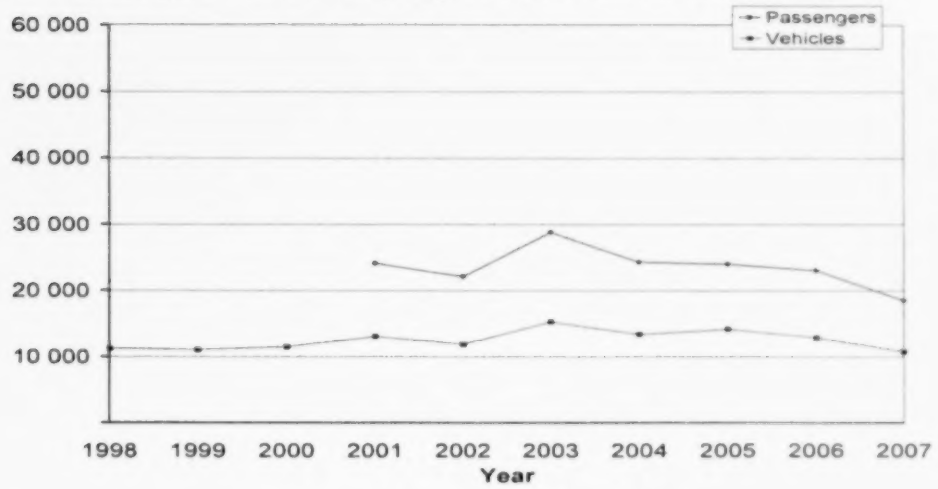


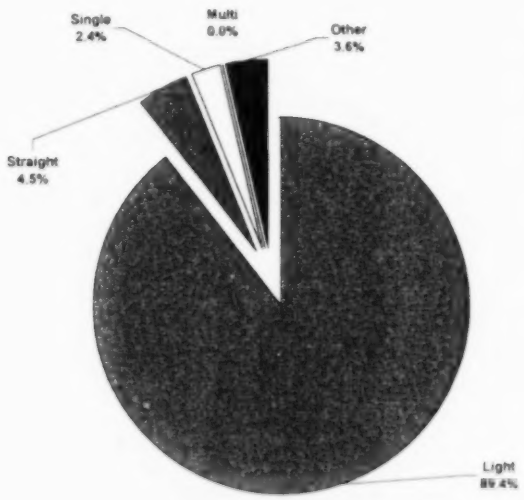
Chart 5.3C 10 Year History of Traffic on the Cecil Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	11 234	11 016	11 484	13 073	11 873	15 254	13 368	14 151	12 897	10 774	**12 512**
Passengers				24 098	22 112	28 819	24 310	24 015	23 052	18 505	**23 559**
ADT	57	58	57	67	71	86	69	74	69	59	**67**
Truck %	10.9	10.8	9.5	10.1	9.1	10.0	9.1	7.7	8.9	7.0	**9.3**

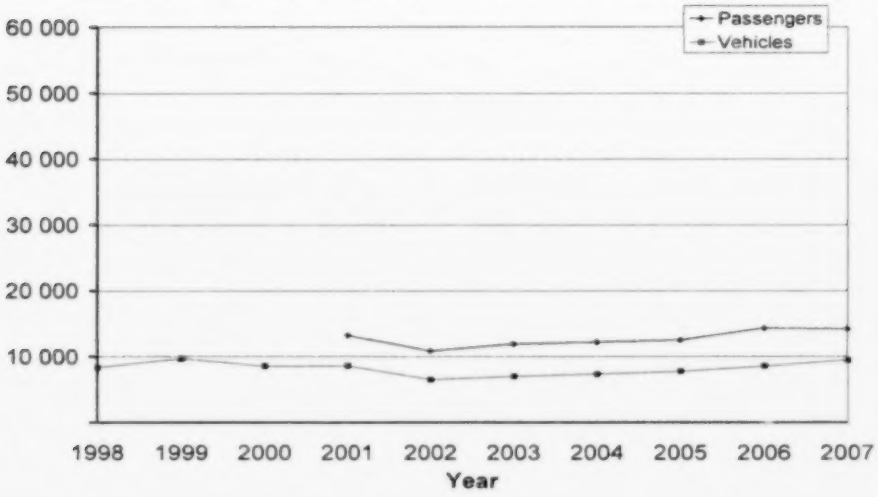
The 2007 Cecil ferry traffic decreased from 2006 by 16%, and the ADT decreased by 15% from 2006.

Chart 5.3D Vehicle Types Using the Cecil Ferry



The percentage of Light and Other vehicles increased in 2007. This was offset by a decrease in the percentage of Straight and Single Trailer trucks.

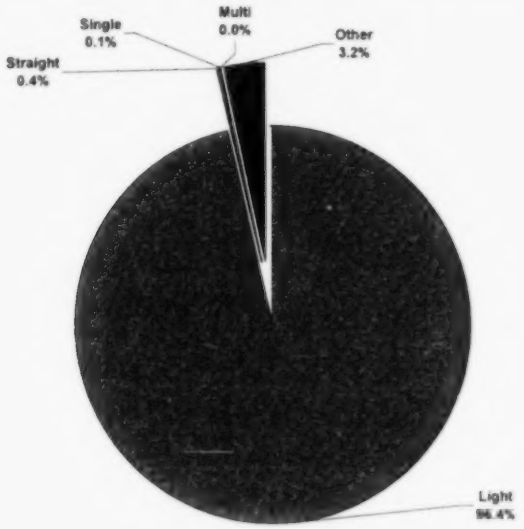
Chart 5.3E 10 Year History of Traffic on the Fenton Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	8 324	9 640	8 533	8 563	6 461	6 974	7 306	7 738	8 519	9 394	**8 145**
Passengers				13 236	10 835	11 909	12 209	12 517	14 341	14 195	**12 749**
ADT	43	51	45	45	40	41	38	43	47	50	**44**
Truck %	1.1	2.8	1.2	1.0	0.8	1.8	0.7	0.5	0.5	0.4	**1.1**

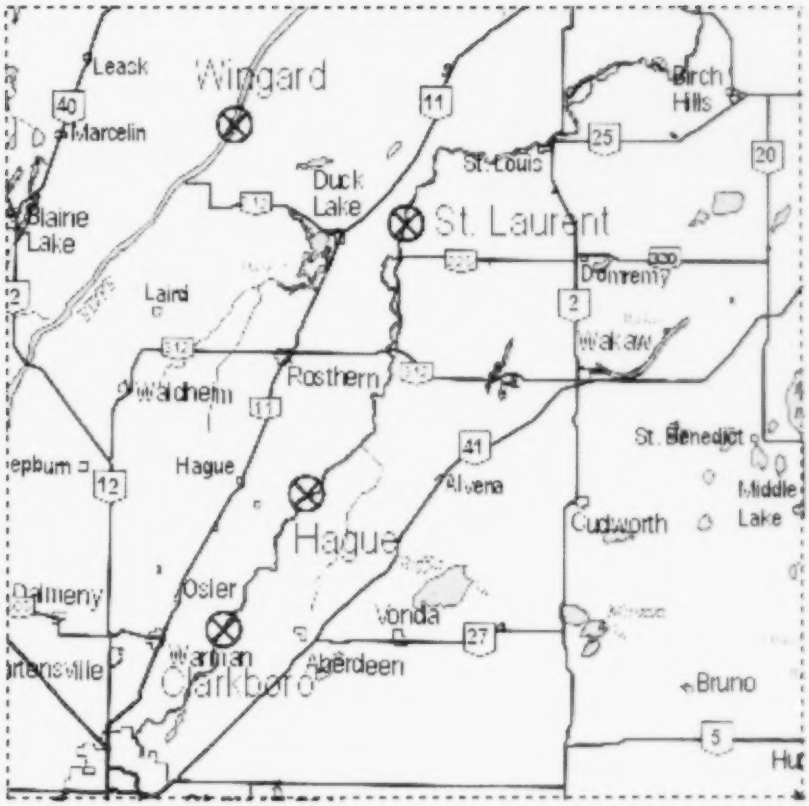
Traffic on the Fenton ferry increased 10% in 2007. The 2007 ADT increased by 6% over 2006 and was above the ten year average.

Chart 5.3F Vehicle Types Using the Fenton Ferry



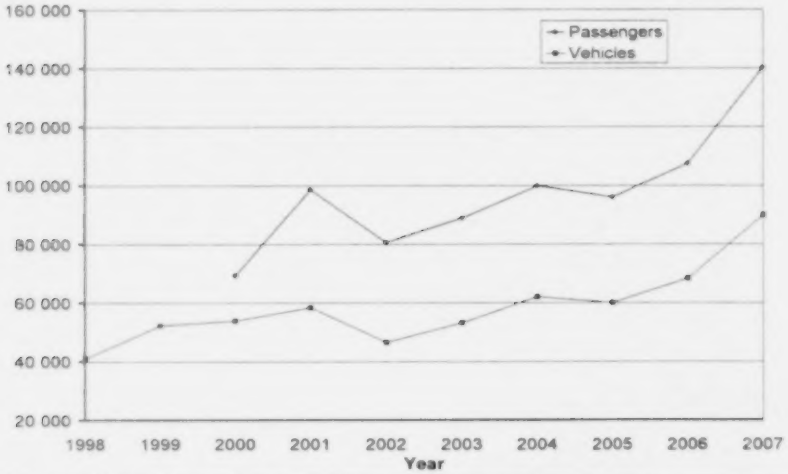
Traffic on the Fenton ferry was almost exclusively passenger vehicles.

5.4 *Saskatoon Area*



The Saskatoon area contains four ferries: Clarkboro, St. Laurent, Wingard and Hague.

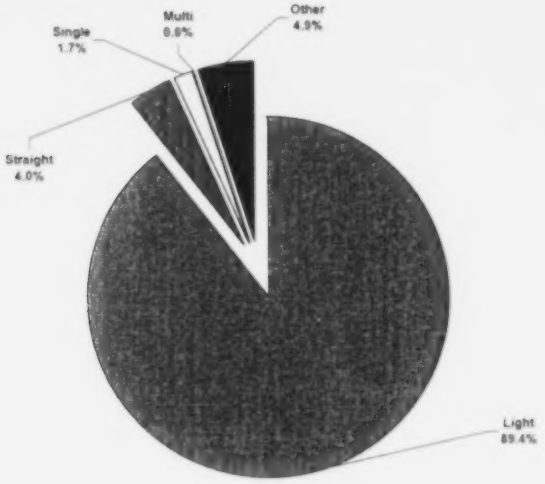
Chart 5.4A 10 Year History of Traffic on the Clarkboro Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	40 839	52 185	53 780	58 303	46 374	53 066	62 005	59 852	68 246	89 880	**58 453**
Passengers			69 292	98 654	80 526	88 909	99 892	95 977	107 442	140 307	**97 625**
ADT	206	234	255	255	234	276	278	298	327	405	**277**
Truck %	3.6	4.0	4.6	5.0	3.9	4.4	4.0	4.9	4.9	5.7	**4.5**

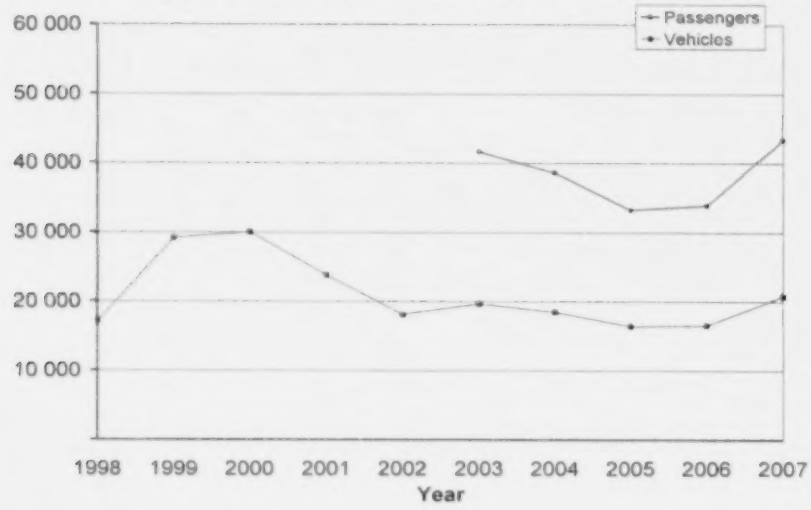
2007 traffic on the Clarkboro ferry increased by 31% from 2006 to the highest level in ten years. ADT increased by 24% in 2007, continuing the yearly increases that began in 2003.

Chart 5.4B Vehicle Types Using the Clarkboro Ferry



The Clarkboro ferry has the highest amount of traffic and the highest ADT among Saskatchewan's ferries.

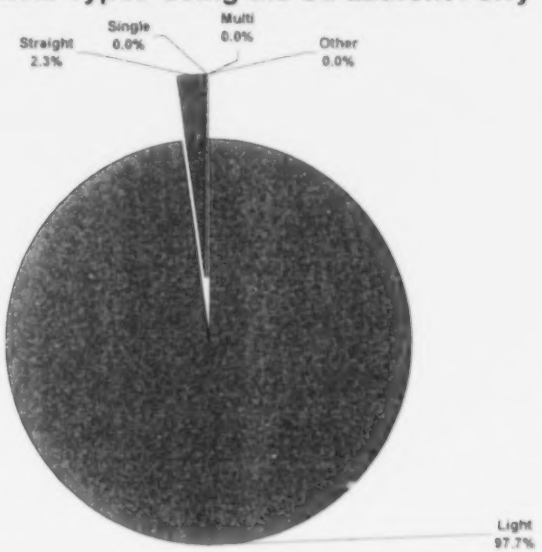
Chart 5.4C 10 Year History of Traffic on the St. Laurent Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	17 133	29 143	29 980	23 796	18 102	19 661	18 474	16 438	16 550	20 752	**21 003**
Passengers						41 656	38 612	33 252	33 897	43 409	**38 165**
ADT	85	130	147	111	99	107	88	84	86	97	**103**
Truck %	1.6	1.8	1.9	2.6	3.8	1.6	1.2	2.8	1.9	2.3	**2.2**

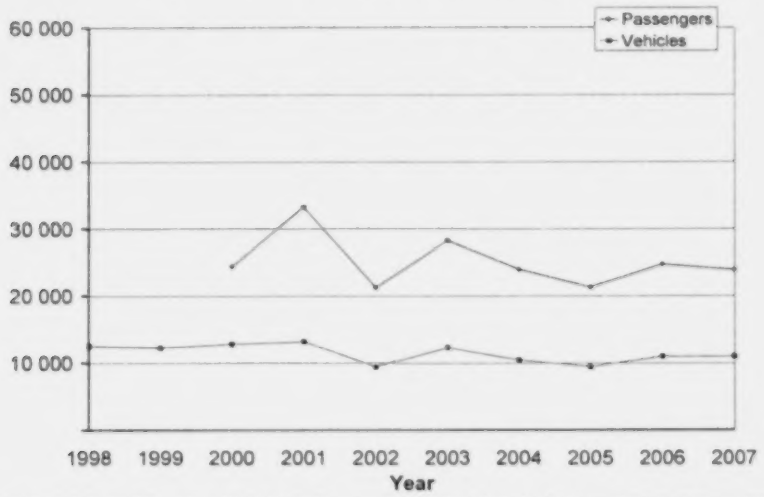
2007 traffic on the St. Laurent ferry increased by 25% compared to 2006 traffic. The 2007 ADT increased 13% from 2006. The 2007 operating season for the St. Laurent ferry was 21 days longer than the 2006 operating season.

Chart 5.4D Vehicle Types Using the St. Laurent Ferry



The St. Laurent ferry carries predominantly passenger vehicles.

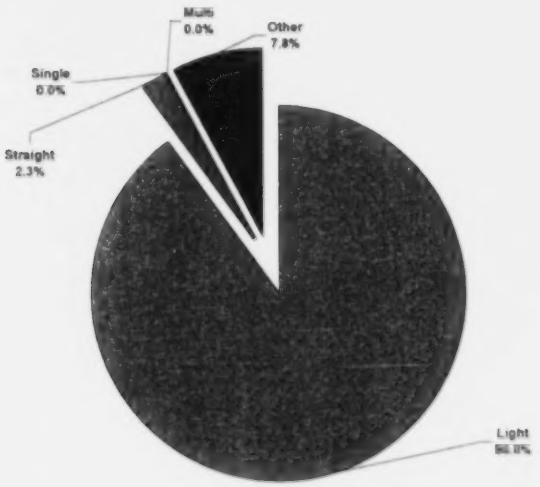
Chart 5.4E 10 Year History of Traffic on the Wingard Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	12 467	12 227	12 791	13 158	9 368	12 276	10 390	9 375	10 898	10 915	**11 387**
Passengers			24 417	33 260	21 271	28 299	23 954	21 305	24 725	23 886	**25 140**
ADT	63	63	63	66	54	66	54	49	57	57	**59**
Truck %	5.4	4.2	3.4	3.2	3.9	5.0	4.3	3.5	2.3	2.3	**3.7**

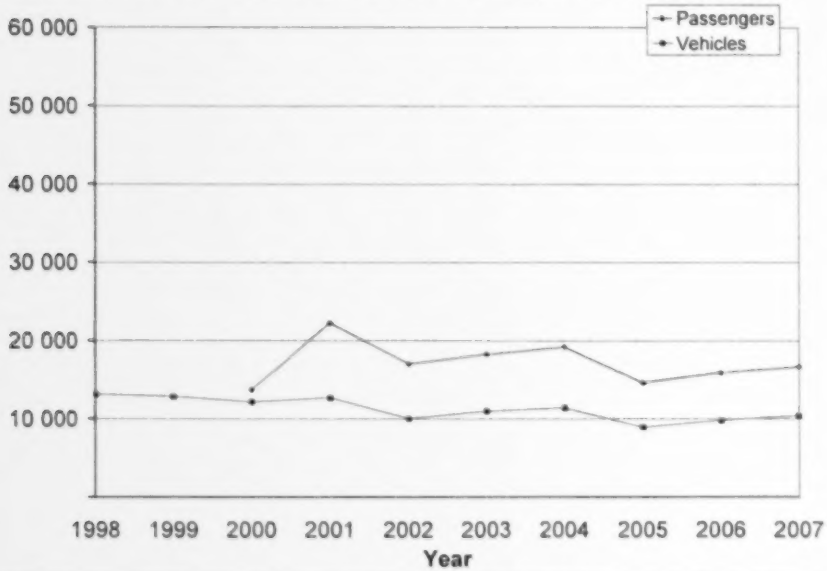
Traffic on the Wingard ferry remained basically unchanged from 2006. ADT also remained unchanged in 2007.

Chart 5.4F Vehicle Types Using the Wingard Ferry



Wingard ferry had a high percentage of "other" vehicles.

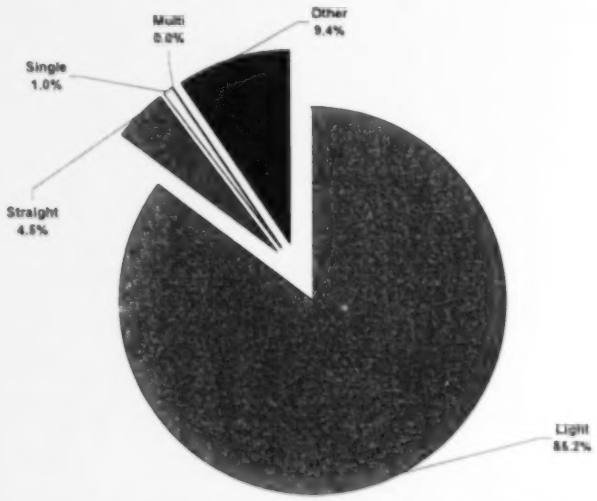
Chart 5.4G 10 Year History of Traffic on the Hague Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	13 122	12 845	12 156	12 652	10 006	10 963	11 368	8 906	9 772	10 330	**11 212**
Passengers			13 705	22 221	17 040	18 254	19 189	14 580	15 885	16 639	**17 189**
ADT	68	58	61	59	55	59	54	51	50	49	**56**
Truck %	12.5	6.4	6.4	4.6	4.8	6.4	5.1	6.4	5.3	5.4	**6.3**

Traffic on the Hague ferry increased by 5% over 2006, but was still below the ten year average. The 2007 ADT decreased by 2% to the lowest value in ten years.

Chart 5.4H Vehicle Types Using the Hague Ferry

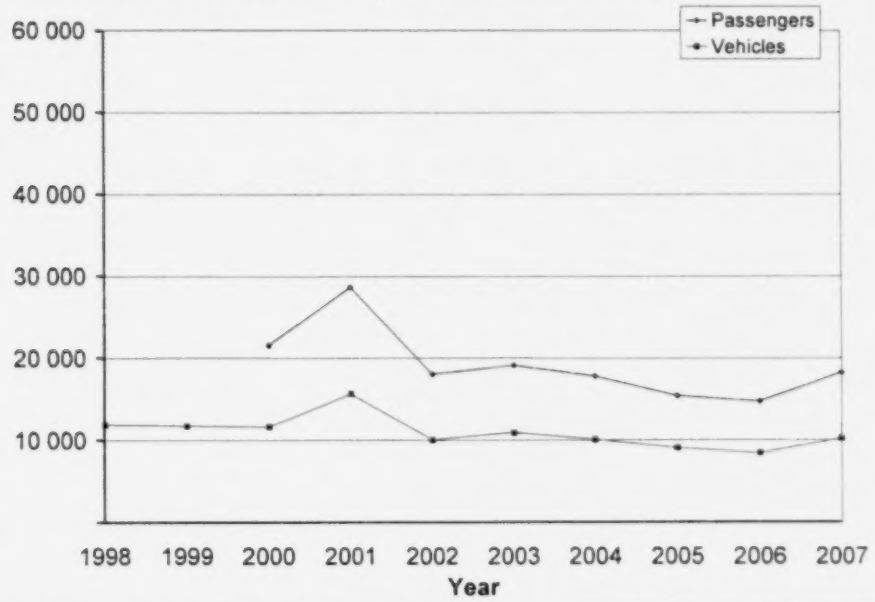


The Hague ferry had the highest percentage of "other" vehicles.

5.5 Swift Current Area

The Swift Current area has three ferries: Lemsford, Estuary and Lancer.

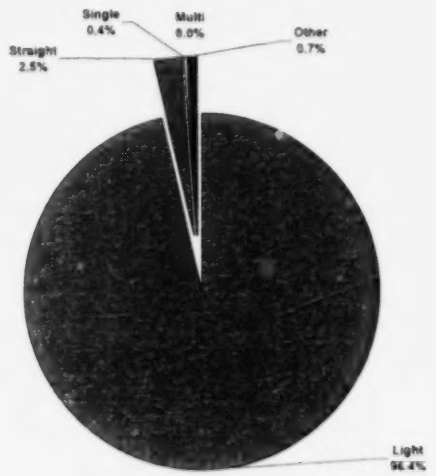
Chart 5.5A 10 Year History of Traffic on the Lemsford Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	11 849	11 730	11 623	15 659	10 031	10 885	10 040	9 042	8 418	10 197	**10 947**
Passengers			21 548	28 651	18 050	19 129	17 797	15 406	14 708	18 233	**19 190**
ADT	58	52	58	69	55	59	48	48	44	47	**54**
Truck %	4.0	3.9	3.6	2.5	5.2	5.8	5.1	3.4	3.3	2.9	**4.0**

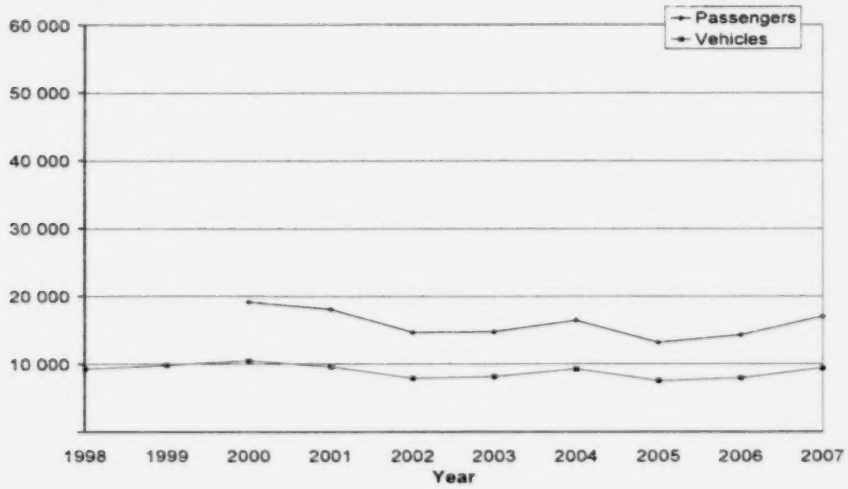
Traffic volume on the Lemsford ferry increased by 21% from 2006 and was the highest volume in the last 4 years. The 2007 ADT increased 9% from 2006.

Chart 5.5B Vehicle Types Using the Lemsford Ferry



The vast majority of traffic on the Lemsford ferry was passenger vehicles.

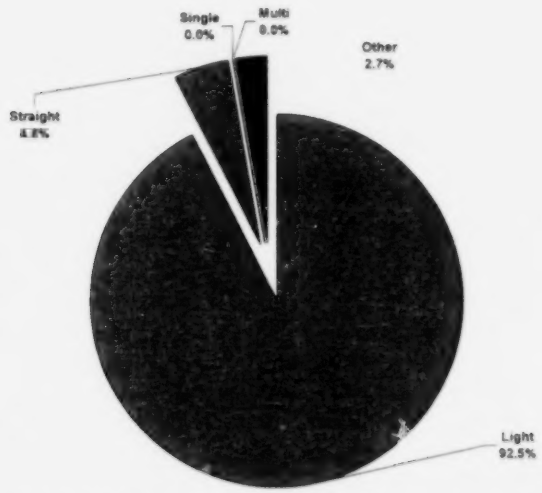
Chart 5.5C 10 Year History of Traffic on the Estuary Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	9 217	9 793	10 437	9 541	7 847	8 096	9 200	7 496	7 888	9 326	**8 887**
Passengers			19 152	18 045	14 631	14 728	16 435	13 156	14 266	16 968	**15 923**
ADT	47	44	52	48	48	49	46	44	43	45	**47**
Truck %	5.1	9.3	5.4	4.7	8.9	6.1	7.5	6.3	6.3	4.8	**6.5**

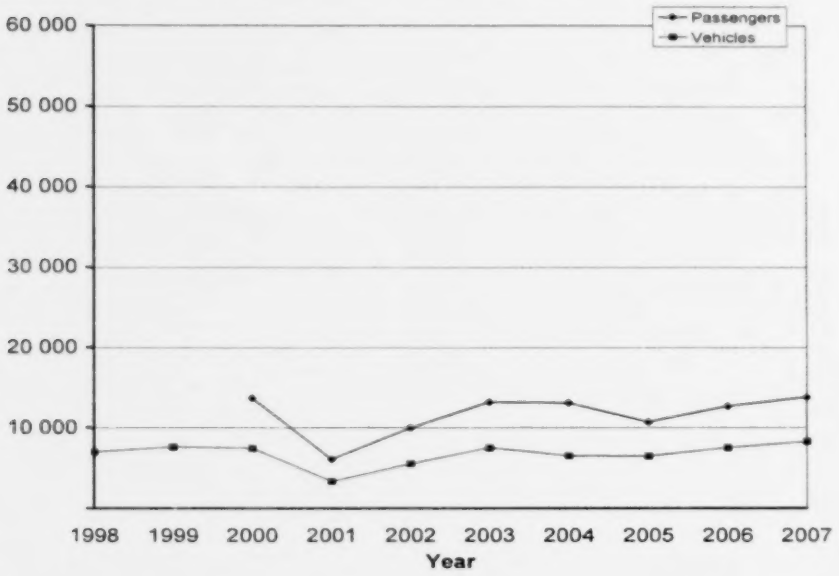
Traffic on the Estuary ferry increased 18% in 2007. The 2007 ADT increased 6% from 2006.

Chart 5.5D Vehicle Types Using the Estuary Ferry



The percentage of trucks using the Estuary ferry has decreased every year since 2002, when there was a high of 8.9%. This ferry also carried the second highest percentage of straight trucks, next to the Paynton ferry.

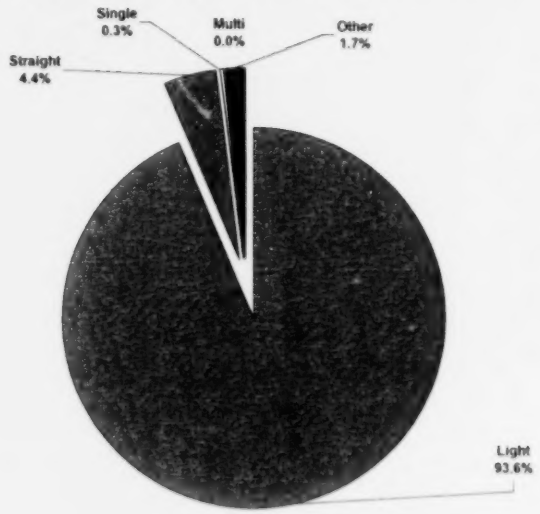
Chart 5.5E 10 Year History of Traffic on the Lancer Ferry



	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Vehicles	6 967	7 604	7 421	3 324	5 503	7 490	6 498	6 461	7 490	8 270	**6 703**
Passengers			13 668	6 113	9 992	13 174	13 090	10 694	12 662	13 790	**11 648**
ADT	33	34	37	34	32	40	31	37	39	40	**36**
Truck %	2.4	4.0	3.7	2.3	3.9	6.7	6.4	4.8	6.6	4.7	**4.5**

In 2007, the traffic on the Lancer ferry increased 10%. The 2007 ADT was very similar to the 2006 ADT with an increase of less than 1%.

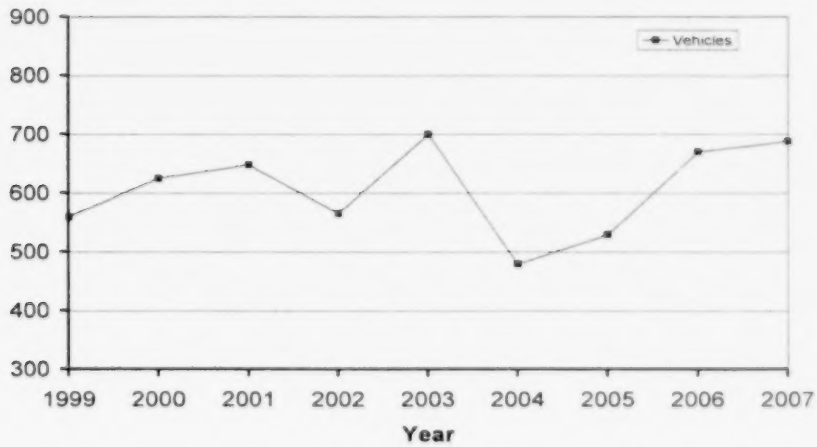
Chart 5.5F Vehicle Types Using the Lancer Ferry



5.6 Wollaston Barge Ferry

The Wollaston Barge ferry connects the community of Wollaston Lake to Highway 905. This vessel is unique because it is the only free-swimming ferry operated in the province and is the only ferry that charges a fee. The Hatchet Lake Denesuline First Nation operates the ferry under contract to the Ministry. The operational season at Wollaston Lake was shorter than other ferries in the province due to the northern location. This ferry carries significantly lower traffic volumes than the southern ferries because the length of the crossing allows a maximum of only three round trips each day.

Chart 5.6A Eight Year History of Traffic on the Wollaston Barge Ferry

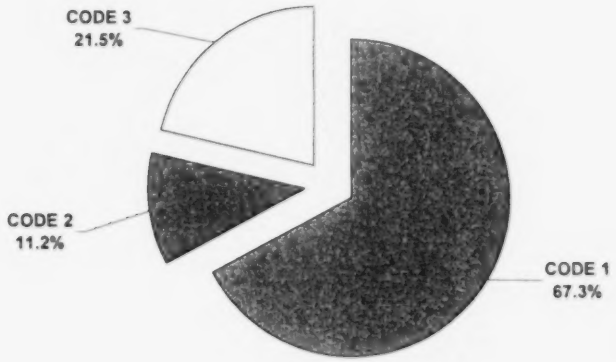


	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Vehicles		559	625	648	565	700	479	529	670	668
ADT		5	5	6	5	5	5	5	5	5
Truck %		38.3	42.7	41.5	45.0	42.6	38.8	34.0	34.5	32.7

In 2007, traffic on the Wollaston Barge remained basically unchanged. The 2007 ADT was the same as the 2006 ADT and was also the same as the eight year average.

The vehicle classification system used at Wollaston is different than that used by the rest of the ferry system. The three codes used at the Wollaston Barge ferry are based on the fee structure charged to the different vehicle types.

Chart 5.6B Vehicle Types Using the Wollaston Barge Ferry



Code 1 - Single Light Vehicle - car, truck (less then a 1 ton), motorcycle, etc.

Code 2 - Other - includes single vehicles with trailer, trucks over one ton, etc.

Code 3 - Full - Any semi trailer, construction equipment, etc.

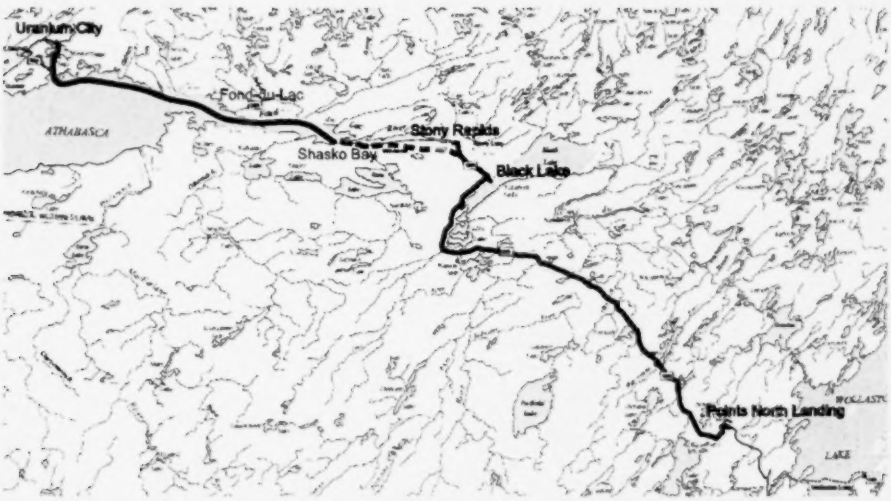
The Wollaston ferry carried the highest percentage of commercial vehicles in the province at approximately 32.7%. Other than by air, this ferry provides the only summer access to Wollaston Lake. There are few passenger trips because the community is small and the trip to the nearest community is quite long.

6.0 Seasonal/Winter Roads

All four seasonal/winter roads were operated by the Ministry in 2006. The four seasonal roads are the Cumberland House road (52 km), the Wollaston Lake road (46 km), the Athabasca road (358 km) and the Riverhurst ice road (2.4 km). Seasonal/winter roads are a vital link to the northern communities. They provide economical access to heavy and bulk commodities like fuel and building materials.

The length of the operating season for the seasonal/winter roads varies from year to year depending on winter conditions. Local traffic often uses the roads outside of the official season. The ice has to be sufficiently thick and the road completely constructed before the Ministry officially opens a seasonal/winter road to travel.

6.1 Athabasca Seasonal/Winter Road



The Athabasca seasonal/winter road was maintained by the Athabasca Basin Development Corporation under contract to the Ministry. Four separate road sections form the Athabasca seasonal/winter road. Over 185 km from Points North Landing to Black Lake is currently a bladed trail that requires extensive yearly repair work. The road from Stony Rapids to Shasko Bay was a winter-only road and the two sections from Shasko Bay to Uranium City are ice roads across Lake Athabasca. In recent years administrative information related to the two middle sections, Stony Rapids to Shasko Bay and Shasko Bay to Fond-du-Lac, has been collected as one section from Stony Rapids to Fond-du-Lac. The combined lengths and operating costs for the section are listed in Table VII.

The combined length of the seasonal/winter road sections from Points North to Uranium City was 358 km. The 2006-07 cost of building and maintaining the four seasonal/winter road sections was $1,414,738 for a unit cost of $3,952 per km. Historical data for the sections are shown in the tables that follow:

Table VI. History of the Athabasca Seasonal/Winter Road (Points North to Black Lake)

Year	Opening	Closing	Length (days)	Length (km)	Cost
2002-03	N/A	N/A		180	$866,523
2003-04	N/A	Mar 31		183	$1,182,483
2004-05	N/A	Apr 4		183	$1,106,954
2005-06	N/A	N/A		183	$835,103
2006-07	Mar 31	Jun 6	68	183	$1,182,483

* There were no official opening or closing dates in 2003 or 2006

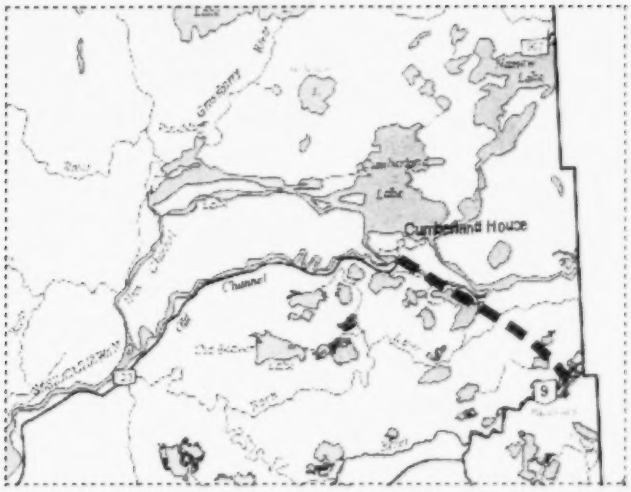
Table VII. History of the Athabasca Seasonal/Winter Road (Stony Rapids to Fond-du-Lac)

Year	Opening	Closing	Length (days)	Length (km)	Cost
2002-03	Feb 10	Mar 31	50	83.6	$215,046
2003-04	Feb 11	Mar 31	50	82	$172,255
2004-05	Feb 10	Apr 4	54	82	$194,918
2005-06	Mar 2	Mar 31	29	82	$176,100
2006-07	Feb 7	Mar 31	52	82	$172,255

Table VIII. History of the Athabasca Seasonal/Winter Road (Fond du Lac to Uranium City)

Year	Opening	Closing	Length (days)	Length (km)	Cost
2002-03	Feb 17	Mar 15	27	92	$99,208
2003-04	Mar 1	Mar 18	18	93	$60,000
2004-05	Mar 8	Apr 6	30	93	$104,292
2005-06	Mar 17	Mar 31	14	93	$94,932
2006-07	Mar 5	Mar 31	26	93	$60,000

6.2 *Cumberland House Winter Road*



The Cumberland House winter road was first operated in 1992-1993. The Cumberland House road was 53 km long and intersects with the north end of Highway 9 just west of the Manitoba boundary. The first 17 km were significantly improved in 2004-05. The roadway was widened and sight distances were improved. These first 17 kms were maintained by Weyerhaeuser.

The winter road was open to traffic for 47 days in 2006-07. An estimated 30 vehicles per day used the road, for a total of 1410 vehicles during the operating season. Total Ministry expenditures for the Cumberland House road in the 2006-07 fiscal year were $33,585.00 for a unit cost of $634 per km, $715 per day of operation, or about $24 per vehicle. The 10 year history of the Cumberland House winter road is shown in the table below.

Table X. 10 Year History of the Cumberland Winter Road

Year	Opening	Closing	Length (days)	Cost
1997-98	Jan 19	Mar 24	65	$3,610
1998-99	Dec 8	Mar 3	86	$4,524
1999-2000	Jan 5	Mar 22	78	$4,500
2000-01	Jan 3	Mar 14	71	$14,242
2001-02	Jan 11	Mar 28	77	$13,113
2002-03	Jan 22	Mar 21	59	$18,952
2003-04	Jan 30	Apr 2	64	$22,424
2004-05	Dec 30	Mar 31	92	$46,575*
2005-06	Feb 9	Mar 24	44	$12,252
2006-07	Feb 3	Mar 20	47	$33,585

* Widening and Sight Distance Improvements

6.3 *Riverhurst Winter Road*

The Riverhurst ice road has operated intermittently for many years. In years when an official road is opened, the Ministry establishes and maintains it. The Ministry did operate the Riverhurst ice road in 2006-07. Local residents may sometimes create a winter trail across the ice in the years that the Ministry opts not to open a winter road. There is no official operational record for those years.

The Riverhurst ice road was opened on January 26, 2007 and closed on March 9, 2007 for a total of 42 days of operation. The total cost to operate the road for the year was $15,402.00 or $367 per day of operation. The ten year history of the Riverhurst Ice Road is shown in the table below.

Table XI. 10 Year History of the Riverhurst Ice Road

Year	Opening	Closing	Length(days)	Cost
1997-98	N/A	N/A		N/A
1998-99	Feb 1	Mar 19	47	N/A
1999-2000	N/A	N/A		N/A
2000-01	Mar 4	Mar 12	9	N/A
2001-02	N/A	N/A		N/A
2002-03	Feb 21	Mar 15	23	$16,547
2003-04	Feb 4	Mar 10	36	$60,782
2004-05	Feb 4	Mar 6	31	$21,000
2005-06	N/A	N/A		N/A
2006-07	Jan 26	Mar 9	42	$15,402

6.4 *Wollaston Lake Winter Road*

The Wollaston Lake ice road was 46 km long and crosses the ice on Wollaston Lake to provide access to the residents of the community of Wollaston Lake. The road was established and maintained by the Hatchet Lake Denesuline First Nation under contract to the Ministry. The total operating cost was $100,079 for a unit cost of $2,175 per km and $1,726 per day. An estimated 200 vehicles per week used the roadway, for a total of 1,600 vehicles during the operating season. The operational history of the Wollaston Lake ice road is shown in the table below.

Table XII. History of the Wollaston Lake Ice Road

Year	Opening	Closing	Length(days)	Cost
1998-99	Feb 15	Mar 31	45	$129,000
1999-00	Jan 17	Mar 31	75	$126,666
2000-01	Feb 20	Apr 8	46	$95,844
2001-02	Feb 12	Apr 5	53	$99,158
2002-03	Feb 10	Apr 5	55	$124,813
2003-04	Feb 18	Mar 31	43	$100,079
2004-05	Feb 9	Apr 6	57	$97,000
2005-06	Feb 21	Mar 31	38	$124,246
2006-07	Feb 2	Mar 31	58	$100,079

7.0 Conclusions

Year over year traffic fluctuations at individual ferries are related to the operating season length, river conditions and local economic activity. In 2007, the ferry system operated above the ten year average traffic levels. Some ferries were closed for a small number of days because of high water levels, high winds, and mechanical issues. Overall, the 2007 ADT was 6% higher than the 2006 ADT. The number of passengers traveling the ferries was approximately 15% higher than in 2006.

7.1 Operating Season/Downtime

- The 2007 operating season length was slightly longer than the 2006 season.
- As in previous years, the Riverhurst ferry had the longest operating season, extending into December.
- The Estuary and Lancer ferries were closed for the longest periods of time due to high water levels and high wind.
- Other cable-stayed ferries in Paynton, Cecil, and Wingard, were shutdown at some point in May because of high water levels.
- The shutdown periods ranged from no shutdown days at six of the ferries to a highs of 4.2% at Estuary, and 6.4% at the Wollaston Barge.
- The operating periods for the seasonal/winter roads were longer than in 2006.

7.2 Traffic Volumes

- Cecil was the only ferry that carried more than 10% fewer vehicles in 2007 than in 2006.
- Fenton, Clarkboro, Lancer, Riverhurst, St. Laurent, Lemsford, and Estuary ferries carried over 10% more vehicles in 2007 than in 2006.
- The ADT at the Cecil ferry dropped by more than 15%, while the ADT at the Paynton, Riverhurst, Weldon, and Hague ferries dropped by less than 5%.
- The ADT at St. Laurent and Clarkboro increased by over 10% and the ADT at Lemsford, Estuary, Fenton, and Paynton by over 5% compared with the 2006 ADT.

7.3 Vehicle Classifications

- The Wingard, Riverhurst, Paynton and Hague ferries had a high percentage of "other" vehicles, which are normally interpreted as farming and recreational vehicles.
- The Paynton, Estuary, Lancer, Hague and Cecil ferries had a large percentage of straight trucks, which are used primarily for short distance hauling.
- Riverhurst, Cecil, and Paynton ferries had the highest percentage of single and multi trailer semi trucks.
- The Wollaston Barge ferry had the highest percentage of trucks.
- Only the Cecil, Lemsford, Estuary, and Lancer ferries had decreased truck percentages in 2007 compared with 2006.

8.0 Recommendation

Require the operators of the Wollaston Barge ferry to collect passenger volumes and implement the vehicle type classification system used at the rest of the ferries. The Traffic Engineers are prepared to assist the Wollaston Barge operators to change their vehicle classification system. The assistance could include a visit to the ferry if required.

Appendix A

Saskatchewan Highways and Transportation

Ferry Traffic Data Summary

Ferry crossing_____ File No._____ Month of_____, 200___

Shift						
Day	LGT	Straight Trucks	Semi Trailer	Multi Trailer	No. Pass	Other
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
31						
Totals						

Statement Certified Correct

_____

Ferry operator

KEY

LGT	-Cars & Pickups
Straight Trucks	-Non-articulated
Semi Trailer	-Single Trailer
Multi-Trailer	-2 or more Trailers

Notes:

1) "Other" includes farm or construction equipment etc.
2) Give details in "Comments" ie: dangerous goods, equipment type, product hauled etc.

Riverhurst Ferry Traffic Data

Sheet No. _____

Date_____ Shift_____ Operators 1. _____ 2. _____

Departure Time	LGT	Straight Trucks	Semi Trailer	Multi Trailer	Other	Pass-engers	Comments	Engine R.P.M.	Weather Wind(Kmh)	Sky	Surface	Temp
Totals												

Statement Certified Correct

_____

Ferry operator

Regular crew Name (please print)	Casual crew called Name	Accept	Refuse

		Main Engine	Genset 1	Genset 2
Hourmeter	Start			
	Finish			
Engine oil pressure				
Engine Coolant temp.				
Torque Converter Temp.				
Torque Converter Pres.				
Engine oil added				
Engine Coolant added				
Torque Conv. oil added				
Transmission oil added				
Final drive oil added				
Hydraulic oil	East Ramp_____		West Ramp_____	

Remarks (Weather, Servicing, etc)

Appendix B

2007 Ferry Downtime

Ferry	Date	Hours	2007 Total Downtime	% of Time Out of Service	Reason
Riverhurst	May 1	5			Upgrade Hydraulics
	May 29	2.5			Repairs
	June 17	3			High Wind
	August 4	2			Repairs
	August 16	3			Repairs
	September 11	5.5			Cable Repairs
	Novmeber 11 to 13	34	55	1.0	High Wind
Paynton	May 7 to May 10	42.5			High Water
	June 11	17			High Water
	July 3 to 5	37.5	97	3.0	No Reason Given
Cecil	May 11 to 15	85			High Water
	July 5	11	96	3.0	Repairs
Wingard	May 11 to 13	51	51	1.5	High Water
Estuary	June 9 to 15	119			High Water
	June 22 to 24	33	152	4.2	High Water
Lancer	June 9 to 16	113.5			High Water
	November 13	11	124.5	3.4	High Wind

Appendix C

Historic Traffic Volumes

Ferry	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Clarkboro	37 284	34 674	42 448	31 975	39 338	42 991	40 839	52 185	53 780	58 303	46 374	53 066	62 005	59 852	68 246	89 880	**50 828**
Paynton	34 293	42 058	30 686	30 453	30 172	34 365	32 453	28 808	33 749	31 348	28 910	32 603	33 996	31 155	31 752	30 111	**32 307**
Riverhurst	38 835	40 242	40 076	41 291	36 449	50 766	45 763	42 424	50 010	47 867	37 578	34 288	34 258	27 829	22 741	31 245	**38 854**
Weldon	28 460	24 754	30 465	26 268	29 657	29 455	28 003	30 382	27 770	25 875	22 461	25 308	27 709	26 124	26 137	25 887	**27 170**
St.Laurent	24 017	18 556	20 421	30 030	19 875	16 987	17 133	29 143	29 980	23 796	18 102	19 661	18 474	16 438	16 550	20 752	**21 245**
Cecil	13 887	13 210	12 752	12 678	11 603	11 303	11 234	11 016	11 484	13 073	11 873	15 254	13 368	14 151	12 897	10 774	**12 535**
Wingard	10 628	10 115	10 719	10 687	9 878	9 420	12 467	12 227	12 791	13 158	9 368	12 276	10 390	9 375	10 898	10 915	**10 957**
Lemsford	13 588	13 381	13 471	12 170	12 805	14 393	11 849	11 730	11 623	15 659	10 031	10 885	10 040	9 042	8 418	10 197	**11 830**
Hague	15 700	20 883	14 442	12 425	11 961	14 577	13 122	12 845	12 156	12 652	10 006	10 963	11 368	8 906	9 772	10 330	**12 632**
Fenton	7 394	6 517	9 730	8 582	8 366	8 716	8 324	9 640	8 533	8 563	6 461	6 974	7 306	7 738	8 519	9 394	**8 172**
Estuary	7 900	8 153	7 278	6 844	8 463	9 058	9 217	9 793	10 437	9 541	7 847	8 096	9 200	7 496	7 888	9 326	**8 534**
Lancer	6 928	7 047	7 649	5 673	6 789	6 685	6 967	7 604	7 421	3 324	5 503	7 490	6 498	6 461	7 490	8 270	**6 737**
Wollaston Barge								559	625	648	565	700	479	529	670	688	**607**
Cumberland	23 192	24 000	23 041	28 198	19 082	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	Closed	**23 503**
Total	**262 106**	**263 590**	**263 178**	**257 274**	**244 438**	**248 716**	**237 371**	**258 356**	**270 359**	**263 807**	**215 079**	**237 564**	**245 091**	**225 096**	**231 978**	**267 769**	**249 486**

Appendix D

Historic Average Daily Traffic (ADT)

Ferry	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	Average
Clarkboro	218	206	234	255	255	234	276	278	298	327	405	**271**
Paynton	210	159	141	170	158	167	175	180	161	169	162	**168**
Riverhurst	213	190	174	216	204	176	169	153	127	131	139	**172**
Weldon	153	142	159	141	135	133	142	141	144	144	137	**143**
St.Laurent	91	85	130	147	111	99	107	88	84	86	97	**102**
Cecil	59	57	58	57	67	71	86	69	74	69	59	**66**
Wingard	50	63	63	63	66	54	66	54	49	57	57	**58**
Lemsford	68	58	52	58	69	55	59	48	48	44	47	**55**
Hague	75	68	58	61	59	55	59	54	51	50	49	**58**
Fenton	45	43	51	45	45	40	41	38	43	47	50	**44**
Estuary	44	47	44	52	48	48	49	46	44	43	45	**46**
Lancer	33	33	34	37	34	32	40	31	37	39	40	**36**
Wollaston Barge			5	5	6	5	5	5	5	5	5	**5**
Total	**1 261**	**1 152**	**1 204**	**1 307**	**1 255**	**1 171**	**1 276**	**1 184**	**1 165**	**1 209**	**1 291**	**1 225**

Appendix E

Historic Passenger Volumes

Ferry	2000	2001	2002	2003	2004	2005	2006	2007	Average
Clarkboro	69 292	98 654	80 526	88 909	99 892	95 977	107 442	140 307	**97 625**
Paynton	60 119	55 475	50 577	56 014	57 743	54 100	46 889	51 909	**54 103**
Riverhurst	100 979	90 056	70 700	66 422	63 193	51 692	42 213	56 320	**67 697**
Weldon	N/A	49 555	44 007	48 249	54 082	51 835	52 851	50 847	**50 204**
St.Laurent	N/A	N/A	N/A	41 656	38 612	33 252	33 897	43 409	**38 165**
Cecil	N/A	24 098	22 112	28 819	24 310	24 015	23 052	18 505	**23 559**
Wingard	24 417	33 260	21 271	28 299	23 954	21 305	24 725	23 886	**25 140**
Lemsford	21 548	28 651	18 050	19 129	17 797	15 406	14 708	18 233	**19 190**
Hague	13 705	22 221	17 040	18 254	19 189	14 580	15 885	16 639	**17 189**
Fenton	N/A	13 236	10 835	11 909	12 209	12 517	14 341	14 195	**12 749**
Estuary	19 152	18 045	14 631	14 728	16 435	13 156	14 266	16 968	**15 923**
Lancer	13 668	6 113	9 992	13 174	13 090	10 694	12 662	13 790	**11 648**
Total	**322 880**	**439 364**	**359 741**	**435 562**	**440 506**	**398 529**	**402 931**	**465 008**	408 065